waveguides on a glass substrate is also described. Waveguides are created by exposing a surface of the substrate to an ion-exchange solvent (e.g., a molten [potassium or sodium] salt). A tightly sealed multi-part crucible [made, for example, of aluminum, is sealed with a graphite gasket tightly clamped between flanges on opposing portions of the crucible,] is provided in order that gas does not leak in or out of the crucible during cooling or heating of the system. [In one embodiment, a potassium-doped waveguide is buried by a thin sodium-doped layer.]

IN THE CLAIMS

Please substitute the claim set in the appendix entitled Clean Version of Pending Claims for the previously pending claim set. The substitute claim set is intended to amendment of previously pending claims 1, 5, 11, 17, 19-20, and addition of new claims 39-41. The specific amendments to individual claims are detailed in the following marked up set of claims.

1. [Amended Twice] An optical component comprising:

a glass substrate doped with a laser species;

a waveguide defined within the substrate; and

a diode pump laser with an extended waveguide within the diode laser's resonator cavity, the extended diode laser cavity being positioned adjacent the substrate waveguide so that pump light from along a length of the extended waveguide of the diode laser's resonator cavity is [absorbed] transferred into the substrate waveguide along a length [thereof] of the substrate waveguide.

5. [Amended Twice] The optical component of claim 4 further comprising a reflection grating formed on the substrate surface along the substrate waveguide [for providing] that provides feedback to the substrate waveguide's laser resonator cavity.

11. [Amended Twice] The optical component of claim 4 further comprising a mirror coupled to a location along the substrate waveguide for providing feedback to the substrate

waveguide's laser resonator cavity.

17. [Amended Twice] A method for operating a waveguide optical component comprising:

providing a diode pump laser having an extended waveguide that is within a laser resonator cavity of a diode laser

transmitting pump light from along a length of the [an] extended waveguide of the diode laser resonator cavity [of a diode laser] into a substrate waveguide of the optical component along a length of the substrate waveguide[, wherein the extended diode laser cavity forms part of a lower refractive index cladding of the substrate waveguide].

19. [Amended Twice] The method of claim 17 wherein pump light from the extended waveguide of the laser cavity of the diode laser is transmitted into the substrate waveguide via evanescent coupling.

20. [Amended Twice] The method of claim 17 wherein pump light from the extended waveguide of the laser cavity of the diode laser is transmitted into the substrate waveguide through apertures in a layer of cladding material interposed therebetween.

39. [New] The optical component of claim 1, wherein pump light from along a majority of the length of the extended waveguide of the diode laser's resonator cavity is transferred along a majority of the length of the substrate waveguide.

40. [New] The method of claim 17, wherein pump light from along a majority of the length of the extended waveguide of the diode laser's resonator cavity is transferred along a majority of the length of the substrate waveguide.

41. [New] The method of claim 17, wherein the extended diode laser cavity forms part of a lower refractive index cladding of the substrate waveguide.